

WHAT IS CLAIMED IS:

1 1. A method for altering the properties of tissue of a subject, said
2 modifying being selected from the group consisting of increasing fat content in said tissue,
3 decreasing fat content in said tissue, increasing epidermal thickness, decreasing epidermal
4 thickness, and increasing elastin content in said tissue, said method comprising applying a
5 dermatologically or pharmaceutically acceptable composition consisting essentially of one or
6 more zinc-containing components in admixture with a dermatologically or pharmaceutically
7 acceptable carrier, in an effective tissue-modifying amount to one or more sites on said tissue
8 in need of said modifying.

1 2. A method for increasing fatty tissue in or beneath the skin of a subject,
2 which comprises topically applying a dermatologically or pharmaceutically acceptable
3 composition consisting essentially of one or more zinc-containing components in admixture
4 with a dermatologically or pharmaceutically acceptable carrier in an amount effective to
5 increase fatty tissue, to a site on the subject in need of increased fat.

1 3. A method according to claim 2, wherein said carrier is a
2 dermatologically acceptable carrier and the composition is applied topically to one or more
3 sites selected from the group consisting of lips, soft tissue, furrows or wrinkles in the face,
4 breasts, stretch marks, buttocks, cheeks, arms, legs, and areas in need of a contour alteration.

1 4. A method according to claim 2 wherein the composition comprises one
2 or more zinc compounds.

1 5. A method according to claim 2 wherein the composition comprises one
2 or more zinc salts.

1 6. A method according to claim 5 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,
3 caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate,
4 gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate,
5 metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate,
6 orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate,
7 picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate,

8 sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate,
9 undecylate, and valerate, and mixtures thereof.

1 7. A method according to claim 6 wherein the composition comprises
2 zinc acetate.

1 8. A method according to claim 2 wherein the composition comprises one
2 or more zinc chelates.

1 9. A method according to claim 2 wherein the composition comprises
2 one or more zinc complexes.

1 10. A method according to claim 2 wherein the carrier is a
2 dermatologically acceptable carrier and further comprises a moisturizer.

1 11. A method according to claim 2 wherein the one or more zinc-
2 containing components is present in the composition in a concentration of from about 1.0 pM
3 to about 900 μ M.

1 12. A method according to claim 2 wherein the one or more zinc-
2 containing component is present in the composition in a concentration of from about 100 pM
3 to about 500 μ M.

1 13. A method of decreasing fatty tissue in or beneath the skin of a subject,
2 which comprises topically applying a dermatologically or pharmaceutically acceptable
3 composition consisting essentially of one or more zinc-containing components in admixture
4 with a dermatologically or pharmaceutically acceptable carrier, in an amount effective to
5 decrease fatty tissue, to a site on the subject in need of decreased fat.

1 14. A method according to claim 13 wherein the carrier is a
2 dermatologically acceptable carrier and the composition is applied topically to a site on the
3 subject's skin selected from the group consisting of the torso, lateral abdomen, legs, face,
4 neck, buttocks, eyelids, peri-eye, arms and lips.

1 15. A method according to claim 13 wherein the composition comprises
2 one or more zinc compounds.

1 16. A method according to claim 13 wherein the composition comprises
2 one or more zinc salts.

1 17. A method according to claim 16 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,
3 caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate,
4 gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate,
5 metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate,
6 orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate,
7 picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate,
8 sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate,
9 undecylate, and valerate, and mixtures thereof.

1 18. A method according to claim 17 wherein the composition comprises
2 zinc acetate.

1 19. A method according to claim 13 wherein the composition comprises
2 one or more zinc chelates.

1 20. A method according to claim 13 wherein the composition comprises
2 one or more zinc complexes.

1 21. A method according to claim 13 wherein the carrier is a
2 dermatologically acceptable carrier and further comprises a moisturizer.

1 22. A method according to claim 13 wherein the one or more zinc-
2 containing component is present in the composition in a concentration of from about 10 μ M
3 to about 100 mM.

1 23. A method according to claim 13 wherein the one or more zinc-
2 containing component is present in the composition in a concentration of from about 100 μ M
3 to about 10 mM.

1 24. A method for increasing elastin content in a tissue of a subject, which
2 comprises applying topically to said tissue a composition consisting essentially of one or
3 more zinc-containing components in admixture with a dermatologically or pharmaceutically

4 acceptable carrier, in an elastin-increasing effective amount, to a site on the subject in need of
5 increased elastin content.

1 25. A method according to claim 24 wherein the carrier is a
2 dermatologically acceptable carrier and the composition is applied to a site on the skin of the
3 subject.

1 26. A method according to claim 25 wherein the composition is applied to
2 one or more sites selected from the group consisting of the face, breasts, buttocks, neck, legs,
3 arms, torso, and furrows or wrinkles in the face, hands or neck.

1 27. A method according to claim 24 wherein the composition comprises
2 one or more zinc compounds.

1 28. A method according to claim 24 wherein the composition comprises
2 one or more zinc salts.

1 29. A method according to claim 28 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,
3 caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate,
4 gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate,
5 metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate,
6 orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate,
7 picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate,
8 sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate,
9 undecylate, and valerate, and mixtures thereof.

1 30. A method according to claim 29 wherein the composition comprises
2 zinc acetate.

1 31. A method according to claim 24 wherein the composition comprises
2 one or more zinc chelates.

1 32. A method according to claim 24 wherein the composition comprises
2 one or more zinc complexes.

1 33. A method according to claim 24 wherein the carrier is a
2 dermatologically acceptable carrier and further comprises a moisturizer.

1 34. A method according to claim 24 wherein the one or more zinc-
2 containing components is present in the composition in a concentration of from about 1.0 pM
3 to about 900 μ M.

1 35. A method according to claim 24 wherein the one or more zinc-
2 containing components is present in the composition in a concentration of from about 100 pM
3 to about 500 μ M.

1 36. A method for increasing epidermal thickness in a subject comprising
2 topically applying a composition consisting essentially of one or more zinc-containing
3 components in admixture with a dermatologically or pharmaceutically acceptable carrier, in
4 an effective epidermal-thickness-increasing amount, to a site of the skin of the subject in need
5 of increased epidermal thickness.

1 37. A method according to claim 36 wherein the composition is topically
2 applied to one or more areas in the face that have fine lines or wrinkles, and/or to other areas
3 of the skin exhibiting epidermal atrophy due to age or due to an underlying pathological state.

1 38. A method according to claim 36 wherein the composition comprises
2 one or more zinc compounds.

1 39. A method according to claim 36 wherein the composition comprises
2 one or more zinc salts.

1 40. A method according to claim 39 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,
3 caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate,
4 gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate,
5 metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate,
6 orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate,
7 picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate,
8 sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate,
9 undecylate, and valerate, and mixtures thereof.

- 1 41. A method according to claim 40 wherein the composition comprises
2 zinc acetate.
- 1 42. A method according to claim 36 wherein the composition comprises
2 one or more zinc chelates.
- 1 43. A method according to claim 36 wherein the composition comprises
2 one or more zinc complexes.
- 1 44. A method according to claim 36 wherein the carrier is a
2 dermatologically acceptable carrier and further comprises a moisturizer.
- 1 45. A method according to claim 36 wherein the one or more zinc-
2 containing component is present in the composition in a concentration of from about 1.0 pM
3 to about 900 μ M.
- 1 46. A method according to claim 36 wherein the one or more zinc-
2 containing component is present in the composition in a concentration of from about 100 pM
3 to about 500 μ M.
- 1 47. A method for decreasing epidermal thickness in a subject comprising
2 topically applying a composition consisting essentially of one or more zinc-containing
3 components in admixture with a dermatologically or pharmaceutically acceptable carrier, in
4 an effective epidermal-thickness-increasing amount, to an area of the skin of the subject in
5 need of increased epidermal thickness desired.
- 1 48. A method according to claim 47 wherein the composition is topically
2 applied to one or more scars or stretch marks.
- 1 49. A method according to claim 47 wherein the composition comprises
2 one or more zinc compounds.
- 1 50. A method according to claim 47 wherein the composition comprises
2 one or more zinc salts.
- 1 51. A method according to claim 50 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,

caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate, gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate, metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate, orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate, picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate, sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate, undecylate, and valerate, and mixtures thereof.

52. A method according to claim 51 wherein the composition comprises zinc acetate.

53. A method according to claim 47 wherein the composition comprises one or more zinc chelates.

54. A method according to claim 47 wherein the composition comprises one or more zinc complexes.

55. A method according to claim 47 wherein the carrier is a dermatologically acceptable carrier and further comprises a moisturizer.

56. A method according to claim 47 wherein the one or more zinc-containing component is present in the composition in a concentration of from about 10 μ M to about 100 mM.

57. A method according to claim 47 wherein the one or more zinc-containing component is present in the composition in a concentration of from about 100 μ M to about 10 mM.

58. A method for treating the gums of a subject to prevent regression or atrophy thereof, comprising topically applying a dermatologically or pharmaceutically acceptable composition consisting essentially of one or more zinc-containing components in admixture with a dermatologically or pharmaceutically acceptable carrier, in an effective amount to said gums.

59. A method according to claim 58 wherein the composition comprises one or more zinc compounds.

1 60. A method according to claim 58 wherein the composition comprises
2 one or more zinc salts.

1 61. A method according to claim 60 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,
3 caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate,
4 gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate,
5 metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate,
6 orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate,
7 picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate,
8 sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate,
9 undecylate, and valerate, and mixtures thereof.

1 62. A method according to claim 61 wherein the composition comprises
2 zinc acetate.

1 63. A method according to claim 58 wherein the composition comprises
2 one or more zinc chelates.

1 64. A method according to claim 58 wherein the composition comprises
2 one or more zinc complexes.

1 65. A method according to claim 58 wherein the carrier is a
2 dermatologically acceptable carrier and further comprises a moisturizer.

1 66. A method according to claim 58 wherein the one or more zinc-
2 containing components is present in the composition in a concentration of from about 1.0 pM
3 to about 900 μ M.

1 67. A method according to claim 58 wherein the one or more zinc-
2 containing components is present in the composition in a concentration of from about 100 pM
3 to about 500 μ M.

1 68. A method for increasing elastin content of the lens of the eye, which
2 comprises providing in the vicinity of the lens one or more zinc-containing components in an
3 elastin-increasing effective amount.

1 69. A method according to claim 68 wherein the one or more zinc-
2 containing components are selected from the group consisting of zinc compounds, zinc
3 chelates and zinc complexes.

1 70. A method according to claim 68 wherein the composition comprises
2 one or more zinc compounds.

1 71. A method according to claim 68 wherein the composition comprises
2 one or more zinc salts.

1 72. A method according to claim 71 wherein the one or more zinc salts is
2 selected from the group consisting of zinc acetate, ascorbate, aspartate, butyrate, caproate,
3 caprylate, carbonate, chromate, citraconate, citramalate, citrate, EDTA, formate, fumarate,
4 gallate, gluconate, halides, iodate, lactate, laurate, laureate, malate, maleate, malonate,
5 metaphosphate, methanesulfonate, monophosphate, myristate, nitrate, octoate, oleate, orotate,
6 orthophosphate, oxalate, oxides, palmitate, permanganate, phenolsulfonate, phosphate,
7 picolinate, propionate, pyrophosphate, salicylate, selenate, stearate, succinate, sulfate,
8 sulfonate, tannate, tartrate, tetrametaphosphate, titanate, transferrin, tripolyphosphate,
9 undecylate, and valerate, and mixtures thereof.

1 73. A method according to claim 68 wherein the composition comprises
2 zinc acetate.

1 74. A method according to claim 68 wherein the one or more zinc-
2 containing components is provided by applying said one or more zinc-containing components
3 to the surface of a contact lens and placing said contact lens over the eye.

1 75. A method according to claim 74 wherein the one or more zinc-containing
2 components is present on the surface of the contact lens in an amount such as to produce a
3 local ionic zinc concentration of from 0.1 to 100 μ M at the tissue-contact lens interface.

1 76. A contact lens having present on the surface thereof one or more zinc-
2 containing components in a concentration of from about 1 pM to about 500 mM.

1 77. A contact lens having present on the surface thereof one or more zinc-
2 containing components in a concentration of from about 100 pM to about 50 mM.

1 78. A composition for altering properties of tissue, said modifying being
2 selected from the group consisting of increasing or decreasing fatty tissue, increasing or
3 decreasing epidermal thickness, and increasing elastin content, said composition consisting
4 essentially of an effective amount of one or more zinc-containing components in admixture
5 with a dermatologically or pharmaceutically acceptable carrier.

1 79. A composition according to claim 78 for increasing elastin content of
2 tissue.

1 80. A composition according to claim 79 wherein the concentration of the
2 zinc-containing component is from about 1.0 pM to about 900 μ M.

1 81. A composition according to claim 79 wherein the concentration of the
2 zinc-containing component is from about 100 pM to about 500 pM.

1 82. A composition according to claim 79 comprising zinc acetate.

1 83. A composition according to claim 78 for increasing fat content of
2 tissue.

1 84. A composition according to claim 83 wherein the concentration of the
2 zinc-containing component is from about 1.0 pM to about 900 μ M.

1 85. A composition according to claim 83 wherein the concentration of the
2 zinc-containing component is from about 100 pM to about 500 μ M.

1 86. A composition according to claim 83 comprising zinc acetate.

1 87. A composition according to claim 78 for decreasing fat content of
2 tissue.

1 88. A composition according to claim 87 wherein the concentration of the
2 zinc-containing component is from about 190 mM to about 100 mM.

1 89. A composition according to claim 87 wherein the concentration of the
2 zinc-containing component is from about 100 μ M to about 10 mM.

1 90. A composition according to claim 87 comprising zinc acetate.

- 1 91. A composition according to claim 78 for increasing epidermal
2 thickness.
- 1 92. A composition according to claim 91 wherein the concentration of the
2 zinc-containing component is from about 1.0 pM to about 900 μ M.
- 1 93 A composition according to claim 91 wherein the concentration of the
2 zinc-containing component is from about 100 pM to about 500 μ M.
- 1 94. A composition according to claim 91 comprising zinc acetate.
- 1 95. A composition according to claim 78 for decreasing epidermal
2 thickness.
- 1 96. A composition according to claim 95 in which the concentration of the
2 zinc-containing component is from about 10 μ M to about 100 mM.
- 1 97. A composition according to claim 95 in which the concentration of the
2 zinc-containing component is from about 100 μ M to about 10 mM.
- 1 98. A composition according to claim 95 comprising zinc acetate.